

Journal

1900

Lemon Tailor

Journal

1900

Vernon Bailey.

Washington to Texarkana

April 7. 1900

Left Washington at 10:55 AM on B & O for Texas. The season is late at Washington, no green on trees, Maples & elms in flower, also some willows, grain & grass fields green, a few flowers have been found.

At Oakland & Deer Park big snowbanks still lie on shaded slopes.

April 8 daylight at Washington, Ind. From there to St. Louis the season is about us at Washington. South of St. Louis (on Mo. & San Mtn. R.R.) the trees begin to show green, on willows & cottonwoods, peach & apple in flower. Dark at Poplar Bluff, Mo.

April 9. Daylight at Texarkana, Texas. The trees are green with young leaves & the woods are bright with flowers. Dogwood & red oval make white & pink clouds among the green trees. In the ^{top} of verandas phlox and other flowers ⁱⁿ + carpet ground.

Austin

Would have reached Austin by dark but had to wait at Taylor - 13 miles east of Austin - until 11 P.M. for an engine to get on the track so did not get in till about 12 P.M.

April 10 Went out to the university & saw Prof. Bray. Spent over prairie & through woods till noon & in P.M. went with the Brays on a long drive west of town among the big hills. Saw the river where the old reservoir had escaped & saw many traces of the flood. Among other effects of the broken dam & recent flood were lack of electric lights & street cars, scarcity of water, closed water closets & no clean water in the tanks.

Three miles west of Austin rise the big, flat topped limestone hills covered with junipers & scrub oaks & forming the first escarpment of the lower stated plain. At the base of this escarpment is a meagre cactus plain reaching to the town

Austin

and for a long distance north & south.
East of Austin, on the other side of
the river, the country is half open
prairie & scrub oak. In fact this
prairie region seems to extend to
Rockdale, or nearly to the Guadalupe R.,
as we noticed in coming in last
night. South toward San Antonio
the prairie country extends to the
Guadalupe R. of Braunfels.

The prairies seem to be rather sandy.
The mesquite plain is a limestone
talus from the bluffs. Each has
its peculiar flora & probably
fauna.

At Austin the University campus
is one mass of blue from the
lupines as acre after acre & miles of
the open country & the prairie.
Many other flowers are abundant
& conspicuous but nothing can
equal the three fields of lupines.

For lists of flowers, trees, & birds
see reports.

San Antonio

April 11

The 6 AM train was reported late on account of washouts so we waited until 2:30 before getting off for San Antonio.

Arrived at San Antonio too late for Corpus Christi train & had to wait until 2:20 P.M. the next day.

April 12. Went out to the old Missions 4 miles west of town but could not get across the creek so bad to be content with looking at them with a glass from a quarter of a mile away.

Took the 2:20 train for Corpus Christi & arrived there at 8:20! Went to Mr. Alexander's hotel near the beach.

From San Antonio it is all mesquit & live oak & cactus to Beeville, where the coast prairie begins & extends nearly to the coast. Scattered mesquites & huisache & chaparral are common.

Corpus Christi

April 13 Tramped around Corpus Christi & learned something of the country. Found a place to trap 4 miles south of town with Mr. Watson. Close to the shore. Saw lots of George's hills & some *S. mexicanus* on flat just south of town. Found lots of birds but few mammals.

April 14 Set traps, hunted, tramped over mesquite plains & shore prairie.

April 15 Sunday. Went to traps & made up some birds & mammals. Went with Mr. Watson about 4 miles south to his father's ranch over the most beautiful flower prairies. Our patch about one by 3 miles in extent is solid yellow with a beautiful *Crocosmia*. Saw roadrunner, killed a *Lynx mexicanus*, saw lots of *Nestor* nests.

April 16, set traps & made up skins.

April 17, Busy trapping & skinning birds & mammals.

April 18

Went down to ~~Flosser~~ Point, 12 miles below Corpus Christi, and crossed a narrow channel onto a small island half a mile from shore to look for pelicans nests. Thousands were breeding there a few years ago but all have been driven away. The island is flat & covered with grass & weeds & cactus. The pelicans used to nest among the cactus. Saw a few pelicans, herons, gulls & terns & what an Ictocoris on the island.

Went over to the Oso Lagoon & waded out to an island where the great blue herons were breeding, about 50 nests ~~on~~ with 2, 3 & 4 eggs & a few young.

Flour Point & the flat country back of it to the lagoon are all sandy & covered with scrub oaks dwarfed from inland species, & small shrubs thornless shrubs including a Vaccinium. This side of the lagoon on the sand clay soil the shrubs are all thorny.

Came home in a rain after an all day trip

Meces River

April 19. Took up traps, made up skins
and prepared for trip up river.

April 20. Went to Corpus Christi and then
followed up the west side of the Meces R.
about 23 miles & camped in Griffith's
Pasture at edge of flooded river bottoms.

Travelled through mesquites & cactus chaparral
and over open prairie with alternating
clay & sandy soils. Farther up the river
the mesquites are larger & more continuous
as a forest or "mesquite orchard" which
is replaced on the bottoms by ^{now flooded} Tussack.
We could not get out to the red river,
timber, said to be of elm & ash & redberry.

Camped under mesquites in pasture
& located a few wild Turkeys as
they went to roost.

Noted over 10 species of birds along
the road. Saw three species I
guess & the tree dove tame at the
ranch of John W. Prior near
town.

Farms all along the first 15 miles
with cabbages & other vegetables as crops
then stock ranches & big pastures.
Cabbages are being marketed.

April 21

Killed a wild turkey before they left the roost in morning. Found them roosting out over water in Husach trees on the flooded land. Later in the day shot another turkey in the woods.

Saw a few more. Shot some birds. Set traps. Watched for turkeys in evening but they did not come back to roost.

Saw tracks of armadillo, coon, possum, skunk, Lynx, coyote, & a few badger holes.

Killed a 4 foot rattlesnake.

Set a few traps

April 22. Caught Spilogale, Opossum, Perognathus paradoxus & a hawk. Packed up & made the return trip to Corpus Christi. Made up skins.

April 23. Prepared for trip to Brownsville. Packed up, made reports, got camp supplies.

Corpus Christi to Kings Ranch

Least Tern 25¢
Wilson Tern 18¢
Black Tern 5¢
big white gulls 18 all kinds, mostly royal

April 24 Started for Brownsville, on road due west from Corpus Christi. Traveled over beautiful flower covered prairie stretches & through Chapman and mesquite orchards. Road soon enters a big pasture & then continues from one pasture to another by gates.

Stopped for lunch at Buzzard Motts, (or Ovra motts) (9 mi. from Corpus) then on over the same kind of country to Petsanillo Creek & camped.

Came about 22 miles from Corpus Christi. Photographed some stretches of flower prairie. Killed meadow lark & thick-billed.

April 25. Found more prairie & open country. Lunched at San Fernando Creek, ^(10 miles) where the soil becomes more sandy. Then on over more prairies & mesquites country to King's ranch where we strike the Alice & Brownsville stage road and turn south. This is 50 miles west of Corpus & 35 miles south of Alice. Camped at windmills 3 miles south of the ranch house in the big pasture. Soil sandy, cactus & mesquites.

King Ranch to San Saba

April 26. Traveled south all day and camped at night at Santa Rosa Ranch. Crossed big prairies and a few strips of mesquite brush, found more sand & at Santa Rosa big sand dunes & ridges with ponds & sloughs in the hollows between. Live oak & mesquites on ridges. Camped in mesquite grove near a lake that was alive with water birds. Came about 25 miles.

April 27. Traveled south all day over big, sandy prairies with a few groves of live oak & mesquite in places. Most of the time out of sight of trees. Prairie brilliant with flowers, which alternate in giving their tints to the landscape. In places the prairie is yellow with one or two species of Coreopsis, cinereo, or Oenothera, orange brown with Thlaspium, pink with phlox & Linaria, scarlet with Castilleja, white with clarkias.

Camped in grove of live oaks full of birds. Came about 25 miles. are 50 mi. N. of Bearsville.

To Saenz

April 28 Remained at camp all day to get our notes written up & let the horses rest, to identify the birds & trap for mammals.

The prairie stretches out of sight on all sides & the birds gather into our little grove of live oaks. Grackles, wrens, & woodpeckers are breeding, many migrants are stopping here.

April 29. Traveled south all day over sandy prairie with occasional live oak groves (worts) & scattered shin oak. Very little mesquite or chaparral. Surface generally level & covered with grass & many beautiful flowers. Different species give this color to every different kind of soil or land. Each little pond has a golden halo of Coreopsis around it, Oenotheras, daisies, & phlox give their colors to their chosen strips. The soil is sandy & loose & the roads very heavy.

At a place about 6 miles before reaching Saenz Ranch the open prairie stops & mesquites & Cactus & chaparral begins with hard sandy soil,

To 15 miles of Brownsville

flood surface, many ponds or marshes, and good roads except when the mud is deep.

Reached Sang Ranch about dark & camped. Grass short, mosquitos bad. Very warm

April 30. Continued southward from Sang through the same kind of flat mesquite country with good road except when muddy.

A perfect jungle of Mesquites, Huasabs, Parkinsonia, condalia, cactus & yuccas.

Crossed the Rio Colorado about noon.

Camped at a little Mexican ranch

Came about 20 miles, roads flooded

May 1.

Travelled south for about 20 miles & camped at edge of big marshy prairie where the road turns west to Brownsville & 15 miles from town.

Left sandy soil & struck flat clay soil about 25 miles from Brownsville.

This is the real river flats extending along both sides of the lower Rio Grande & is considered rich land. It is a perfect jungle of cactus & mesquites.

Brownsville

May 2. Drove into Brownsville in forenoon & in PM went across to Matamoras with Capt. Smith who showed us interesting parts of the town & country & introduced us to Miss A. E. Dysart, the local botanist & other interesting people. Went up in the tower of the Cathedral where we could see for miles up & down the river & over the perfectly flat country on all sides. For 30 miles to the west the country is said to be the same flat, mud sailed river bottom with the same fauna & flora as here on the east side around Brownsville.

Cotton & corn & sugar cane are the chief crops on both sides of the river. Oranges & limes & bananas & guavas do well but there seems to be no enterprise or energy in the people about raising fruit crops. The climate is extremely muggy.

It is 30 miles from here to the coast and I have been, steamed by a little narrow gauge R.R. Yesterday at the Rio Colorado we were 12 miles from the coast.

Plants of the Brownsville bottoms

Prosopis juliflora

Acacia farnesiana

Populus aculeata

Fraxinus

Cordia

Lycium

Sippia ligustrina

Korreslinia spinosa

Yucca baccata

Agave maculosa

Palm, *S. mexicana* - a few reported by Miss Dysart

Opuntia engelmannii

" *leptacantha*

Ceratonia siliqua?

Echinocactus texensis

" *setispinus?*

Ceratonia straminea

Brownsville to Corpus Christi

May 3 Left Brownsville at noon
for the return trip. Camped 12 miles
out. Rained hard for an hour just
before we started. Roads muddy.

May 4 - 11. Followed the same road back
to Corpus Christi via Sanz Ranch,
Santa Ignacia, Santa Rosa, + Kings Ranch.
The distances amounts to about 190 miles.
On the return we found many of the
flowers of the previous trip gone +
others taking their places.

Camped May 4, at about 5 miles south of
Rio Colorad. May 5 at Rio Colorad,
May 6 at pond 5 miles n. of Sanz,
May 7 at San Ignacia, May 8 at
Santa Rosa, May 9 at Flamingills
7 miles south of Kings Ranch, May 10 at
Petronillo Creek, and May 11 reached
Corpus Christi.

May 12 + 13 Busy packing specimens +
writing reports

San Antonio & Uvalde

May 14. Left Corpus Christi at 7:20 A.M. and reached San Antonio about 2 P.M. In leaving the coast we passed through the narrow belt of coast chaparral with its cactus, thorn brush + low mesquites. and met the live oak strip extending to Skidmore. Then prairie with a few scattered live oaks + mesquites along creeks.

After passing ~~Kenedy~~ we strike a river, and see the first pecan trees. Then are beautiful live oaks + moss along the banks and fields of flowers are brilliant including species that have vanished farther south.

Reached San Antonio in a rain.

May 15. - Left San Antonio at 9 A.M. for Uvalde, and arrived there at 2 P.M.

After passing Junction we begin to go up considerable grade + the country has some slopes. A low escarpment appears to the north + approaches or retreats as we go westward, becoming higher.

The country becomes more open with lower, more scattered mesquites + stretches of open prairie. Along streams the mesquites are dense.

Uvalde

There is often thick timber of Pecan, elm, *Citrus*, & live oaks. At Sabinal the river is bordered with numerous large cypress trees (*Cupressus Taxodium distichum*).

The country is gorgeous with flowers in masses - *Coreopsis*, *Crotona*, *Rudbeckias*, *Helianthus* & *Alionanthus* f., *Callaibas*, *Argemone*, phlox & lupines. Grass is good. Pastures are large. Houses & towns few -

May 14: Uvalde. Drove out several miles west of town and to the creek east. Took some photos and notes on plants & birds. Expected to take train to Del Rio but it was 5 hours late so waited over another day for Oberholser - who was to visit us here yesterday.

The rains have made the roads very muddy & bad & filled the streams so many of them are not crossable. 8 inches of rain has fallen in 2 days.

to Del Rio

May 17. Schubel's came at noon.
had been delayed by rain &
streams & had shot a piec^e out
of his hand. Waited about an hour
with him & then took the train for
Del Rio.

Soon crossed the Meces River with
its extensive and somewhat wooded
bottoms, climbed onto higher,
more open land. Mesquite plain
is characteristic yet but the mesquites
are more dwarfed & scattered, low
shrubs come in, grass covers
the whole region which seems to be
an extra good stock range.
West of Spofford the country becomes
more arid and lots of new plants
come in of real desert species.
Hence to Del Rio the country is
typical arid low- real desert.
Saw blue quail west of Spofford.

The lower escarpment of the stocked
plains shows as a line of hills to the
north until near Stamford.

Reached Del Rio at 7 P.M.
Went to Franks Hotel.

To Peos High Bridge

May 18. Drove down to the Rio Grande through the irrigated farms & mexican rancheros. The river is still high but it has gone down from the recent flood that covered the flats. From Del Rio to the river the country is low & level enough for irrigation. Most of it is in fields of corn or grass or cotton or vegetables - orchards & vineyards. Not half of the water from the big springs of San Felipe Creek is used & much more land could be cultivated.

Figs & pomegranates & banana trees & palm do well

~~Left~~ Went out to the big spring, 3 great bottling holes in the ground where the whole river boils out, clear, cold & sparkling. from horizontal layers of lime rock.

Above town the country is very deserty & barren

Left Del Rio at 4:40 P.M. for Peos bridge & arrived there before dark. At Devil's River we run close one side to the Rio Grande & to big cliffs on the other. Great caves & sharp canyons mark the cliffs. Instead of following the Rio Grande the RR turns up Devil's River and cut over the mesa by Cimarron.

May 19. High Bridge over the Pecos
is on the new cut off. It is 322 feet high
and 2180 feet long, spanning the tops of
the canyon. We stopped with Mr. & Mrs. King,
the section people at east end of bridge.

Went down into the Pecos Canyon and
followed up the river about 2 miles. The
canyon is about 2000 feet wide &
300 feet deep with steep walls, often
perpendicular to the rivers edge, of soft,
stratified, fossiliferous lime. Numerous
side canyons & gullees cut down to
the river. A narrow sand flat borders
the river part way, but it has all been
flooded lately. The river rose 30 feet
in $1\frac{1}{2}$ hours, but has gone back to
normal high water. A few trees & much
rush fill the canyon bottom.

Two large springs pour into the river
near the bridge. The lime rock
is full of big caves and caverns

The top of the country is a
limestone mesa, very barren
and does not live with abundance
of cacti, agaves, yuccas, Dasylirion
& Fouquierias.

May 20 Sunday. Went to my traps & down in the canyon where I staid nearly all day, too sick to tramp about much.

May 21. As it rained all day & I did not feel well I worked on plants in the house most of the time. Identified a good number of species.

May 22. Hunted hard all the A.M. for rock squirrels but did not kill one. They live along the sides of the canyon & are very shy, running over the walls and out above if startled. Packed up our things and took the 5:30 P.M. train to Alpine. Stopped at Langtry for supper & then climbed up grade onto the open, dry mesa and kept in open country till dark. A few junipers along streams mark the only change in flora of west. *Yucca glauca* have gone to seed low down but on the high ground N.W. of Langtry they come back in full flower abundant & beautiful.

Alpine

May 23. Found Alpine a wretched little railroad town in the middle of a big, barren valley surrounded by low mountains. Got a team & drove out to the ranch of Judge Brockenbrough 3 miles south of town on a corner of the mts. Found it a beautiful place among live oaks with rocky slopes & cliffs rising abruptly 2000 feet from the house. In front the ranch looks out over the smooth valley.

Set traps around base of rock cliff
Shot a Lynx

May 24. Went to top of the highest peak near the ranch - about 6000 feet. From it we could see rough peaks & ridges on all sides. The whole country seems a mass of low, rather barren, rough & rocky mts. of volcanic origin. The rock is hard and perhaps metamorphic in places & again porous and evidently of late origin. No good craters seen.

Scattered junipers high up. No solid timber, just scattered live oaks, bunch cactus, Yuccas & Dasylirion & Agaves.

To El Paso & Cloudcroft

May 25 Hunted, made up skins, photographed and worked around the ranch.

May 26 Went down to Alpine in evening & waited for El Paso train till 1 A.M. ~~in morning~~.

May 27. Took train in night & woke up near Sierra Blanca. Found the same old, dry, barren desert with its rich crop of creosote bush.

Arrived at El Paso at 8:40 & found there was no Sunday train for Alamogordo. Went to the hotel Pierson & then over to Juarez. A hot day.

May 28 Left El Paso at 10:30 A.M. for Alamogordo, N.M. Passed Ft. Bliss out on the mesa. A nest looking post on a barren Larrea plain a typical desert. Continued on, over smoother desert valley, growing more sandy & arid barren between bare rocky ranges of desert mts. No timber, no streams, no water. As the soil becomes very sandy the yuccas (a tall jointed agave-like)

Cloudcroft

become more abundant, rising with trunks 8 or 10 feet high surrounded by flower stalks 5 or 6 feet. For miles these yuccas form the bulk of vegetation. They are not in flower. The country is very dry. Old dry grass is abundant but not a green blade. The bunches of dwarf mesquites are the only green things. In places it has caught the sand & formed dunes 4 to 10 feet high.

Extensive prairie dog towns near Ft. Bliss.

Jarillo Junction - 1 P.M.

Artemesia filifolia?, *Atriplex canescens*,
Ephedra trifurcata, *Prosopis juliflora*,
Yucca stricta & grass are the principal plants.

On the east the Sacramento Mts. rise abruptly in a wall of stratified limestone several thousand feet high & back of that we get glimpses of a higher, timber covered range.

Reached Alavogorda at 3 P.M. & took narrow gauge log train for the mountains of Cloudcroft. A few miles north of Alavogorda we turn up a canyon & the east & climb steadily

up steep grade for about 3 hours.
The country is rough & picturesque.
Saw *Juniperus pachyphloea* - *J. Virginiana*?
& *Pinus edulis* on the foothills &
kept with them up to edge of big pines
& Douglas spruce. Train got tired
& we made the last mile in wagon.
up through beautiful forest to the
camp of Cloudcroft.

Located in tent no 5. on Chipmunk Ave.
Were glad to have a fire to go to bed by.
Passed a few little cabins & log houses
& two lumber camps. The train hauls
logs down to Abiquardo - yellow pine &
Douglas fir. The mountains are covered
with splendid timber but are scantily watered.
A few springs & creeks seen low down but no
water near the top. The supply is pumped
up about 3 miles to the town of Cloudcroft.
From lower Sonoran zone in the valley
we pass through Upper Sonoran, &
Transition & find ourselves in Canadian
at Cloudcroft. Many transition species
are still with us on warm slopes
but otherwise the vegetation is
pure Canadian.

May 29

Woke early with a chorus of bird songs outside our tent & for the first time saw plainly the beautiful woods around us. Had a good breakfast in the big Pavilion dining room & then went out on Scenic Point for some photographs. Could look down over the wide valley to the west with its great, bare, shining playas & across to the blue range of mts. west of it. We are on the very top of the Sacramento mts. & the top is flat. Cloudcroft is 9130 feet above sea level.

Hunted & set traps.

May 30. Caught a lot of things & skinned & packed up specimens most all day. Set more traps.

May 31. ~~Took~~ ^{Made}. Took a lot of photos.
~~Packed~~ ^{Made} up specimens.

June 1. Took up traps, made up the last specimens, packed up our things & got ready to leave.

To El Paso

July 2. Started down from Cloudcroft at 9 A.M., from Hobo gear at 0. Read barometer, took notes on plants, & photographed all the way down to Alamogordo, where we laid over from 12 to 3. Came down on top of coloose behind 15 loads of logs, made about 7 miles an hour.

There are big sawmills at Alamogordo and the El Paso & N.E. R.R. run a stage which, with the addition of county seat & a small stream of water seems to give a slight excuse for a town of 1,000 people in the bare desert valley. A great, tall playa lies to the north. In the basin valley, just west of Alamogordo, on the way to El Paso we met & passed through a rain & hail storm in valley with its circling, lurid clouds, solid front of rising dust, torrents of rain & hail.

The mesas data are beginning to flower & this rain will soon bring them out. Reached El Paso at 7 P.M. & went to Mrs. Holis boardinghouse, at 411 Magoffin Ave. Found it very pleasant.

El Paso to Riverside, Calif.

June 3, Sunday. Wrote reports & letters all day.

June 4. Started at 8:20 a.m. from El Paso. Was impressed by the evidence that the Rio Grande had cut its way through the mountains that would otherwise have formed a chain across from the Organ Mts. to the similar range in Chihuahua west of Juarez.

The El Paso flora extends up the Rio Grande valley and west across the higher country half way to Demming.

Got dinner at Bowie at 2 P.M.
& supper at Tucson at 7 P.M.

June 5. Woke up at low part of Colorado desert below sea level. Got breakfast at 7 a.m. at Lubbock & reached Cotton at 9:48 A.M. Took 10:15 car to Riverside & stopped over to see the country around there.

- 1 Drove out 2 or 3 miles south on Victoria Ave. among beautiful orange and olive groves. Came back on Magnolia & Palm & Park Avenue between magnificent rows of palms & palms

To Twin Oaks

trees & magnolias. Climbed up on Rubidoux heights for a view over the valley & town.

Almost the whole valley about Riversides is under thorough cultivation, the greater part in oranges, which are ripe about half gathered.

Stayed at the Glenwood Inn, a most delightful old shady, roomy hotel in the middle of town but also in the midst of trees & rich plants.

June 6 Got up early & visited the park & cactuses garden before breakfast. Found the greatest wealth of flowers strange plants & beautiful foliage I ever saw. Took train at 8:30 for San Marcos around by Santa Ana & Oceanside. struck the shore a few miles west of the old mission Capistrano & followed it to Oceanside where we had to wait from 12 to 4:48 Tramped over hills & took photos & went bathing. Cool & windy.

Reached Twin Oaks at 5 P.M.

June 14. Worked about Twin Lakes
& Escondido, trapping in valley & up
the arid hills among them. Caught
Thomomys high up & low down. Collected
a lot of birds & a few plants.
The country is dry. A few springs
in hills, & open water places in valley
are drinking places for birds & mammals.

The mountains are about 1500 to
2000 feet high, granite with rounded
peaks & boulders & edges projecting.
They are steep, eroded ridges with
gravelly soil covered with chaff & ~~scrub~~
of Adenostoma, scrub oak, Manzanita,
Eriogonum, Rhus & other bushes
growing in a tangle. The west slopes
are more brushy than the east.

The valleys are mostly cultivated in
grain & fruit which usually do well
without irrigation but for 3 years
have been too dry for good crops.
There is very little irrigated
wheat, oats, barley, corn &
alfalfa are the main crops.

Oranges, lemons, limes,
apple fruit, tangerines, olives,
figs, peaches, apricots,

Prunes, plums, cherries, apples,
pomegranates, grapes & small fruits
all do well. Eucalyptus groves
are common & many Australian
ornamental trees are raised.

A few immense live oaks &
sycamores grow along the valleys
but the hills are almost destitute
of timber. The granite cuts 20
or 30 miles to the east, have tall
timber & are said to be inhabited
by chipmunks & grizzly bears.

To Pasadena

June 14 Left San Marcos at
8:20 AM & arrived at Los
Angeles at noon. Went to
S. Pasadena. Ostrich farm & saw
about 60 birds of various ages
from 3 days up. Took photos
of various black bird riding on
backs of ostriches & picking
their feathers.

Ran out to Pasadena &
out along Larch Grove Ave
& Colorado St. Got good
view of valley & the big
mountain range that seems
a continuation of the San Bernar-
dinos & very similar. High
& steep & rough & rather bare of
timber. Sides mostly covered
with chaparral. Valley beautifully
cultivated in orchards & vineyards
various fruits. Beautiful houses
& wonderful flowers & shade
trees. Good roads.
Delightful & inviting.

To Sacramento & Marysville

June 15 Woke up in the south end of the San Joaquin Valley & arrived at Bakersfield for breakfast at 7.

Picked up Luther J. Goldman at Alila Reached Sacramento at 6:30 P.M.
& staid over night.

June 16. Left Sacramento at 10 a.m. on the west road for Marysville, crossed the river and the big tule swamp that reaches along the west side & at Davis turned north by woodland & along the side of the valley among grain fields, fruit orchards, good farms and beautiful big oaks (*Q. lobata*) scattered over fields & valley. Recrossed the river & big tule swamp & followed up the Feather River to Yuba & Marysville. Established camp.

June 17 Sunday.

Picked up things to remain & looked for horses.

June 18. Got 2 horses, used the day in getting outfit arranged, horses shod, supplies, & outfit stuff.

Brown's Valley

June 19. Did not get off till afternoon
Travelled east 12 miles to Brown's Valley and
camped a mile beyond. Struck the foothills
about 8 miles east of Marysville after crossing
level, fertile valley all fenced & in grain.
Grain ripe and a good crop. A few
orchards & vineyards. Back a few miles
from Marysville we struck scattered oaks
(Q. douglasii) which increased in abundance
on the foothills. No other tree in valley
except along the rivers where willows &
cottonwoods form dense groves.

Wild oats, turkey mullein & a few small
plants & grasses grow, or have grown, &
now stand dry, in the fence corners.

High dikes (-li "Yobs-dam") extend back
from Marysville to near the foothills to
protect the land from overflow. The rathey
land is valued at from 100 to 500 dollars
per acre.

The foot hill country is not steep or
rough but the soil is stony & poor except
on the bottom strips. The hills are covered
with scattered oaks, *Acrothia cuneatus* &
Rhamnus . . . , *Rhus trilobata*, and
back near Brown's Valley *Pinus sabiniana* begins.

Brown's Valley is a wretched little mining
camp in a narrow gulch.
A few orange trees in one yard were loaded
with ripe fruit.

There is little to mark the line between
Lower & Upper Sonoran zones but it is
probably near Brown's Valley.

To Dobbins

June 20. Continued all day along creek valleys and over ridges to near Dobbins & camped at ranch. In low foothills all the way. Good ranches in valley bottoms, hills dry & brushy & covered with scattering forest of oaks, diggers, pines, Ceonothus, & *Acastostaphylas*.

A few *Pinus ponderosa* appeared before we reached Oregon Creek but kept on the cold slopes & gulches. Passed beautiful groves of old white oaks (*Q. longissima*) with their white trunk & wavy branches & elm shaped tops.

Came up very slowly & camped near Dobbins at about 2000 ft. Came only 10 miles. Crossed Oregon Creek at noon & found Alnus, Platynus & such trees along its banks.

Orcards of apples, peaches, pears, plums and figs are common along the road. Grains & hay are the principal crops. Mining is the main industry of the country.

Nearly every brook & gulch have been dug & washed

Ceanothus cuneatus +

June 21. A mile from camp we passed the little town of Dobbins, at about 2000 feet altitude, where we left the last trace of Pinus sabiniana, Quercus lobata, Q. douglasii, Ceanothus cuneatus, & their accompanying forms. Saw Layia pectinata & Catalpa in Dobbins door-yard.

Began climbing & ^{1 to 4 miles} ~~a road east of~~ Dobbins struck beside abundance of Pinus ponderosa & Libocedrus decurrens, Pseudotsuga, Pinus lambertiana, Cneobatia foliolosa, Acer macrophylla, Quercus California, Q. chrysophyllis, Q. wislizenii, Tunison, Arbutus, Ceanothus Thyrsiflora, (big ones). C. prostratus, Quercus densiflora, Fagus nuttallii; & Abies grandis? at 2300 to 2800 feet. In other words we struck pure transition zone at about 2500 feet on west slope 2 miles east of Dobbins.

Farther along in cold N.E. gulches Pachystima is common, Alnus, Aegopodium & other plants from Canadian zone.

Came down again to Ballard Bar on W. Yuba R. at 1800 feet, but in the narrow gulch found only transition species common.

Crossed the river & followed up long grade to Campionville on ridge at 2780 & on up grade 3 miles farther to road station on ridge at 3750 & camped.

No grass except in a few places in patches, plenty of streams & springs, thick chaparral & good timber.

Came 22 miles.

June 22 Climbed steadily up easy grade & good road along crest of ridge till nearly 5000 feet, 4800 was the highest reading but higher ridges were crossed. Deep canyons down steep slopes to rivers on both sides. Splendid forest in which *P. ponderosa*, *P. lambertiana*, *Pseudotsuga*, *Libocedrus decurrens*, and *Abies magnifica*? hold about equal rank. Trees of ten & feet in diameter & 150 or more high. Sugar pine is probably the largest on an average. *Camassia* forms miles of beautiful clean carpet dotted with flowers. *Arctostaphylos manzanita* takes the places of *viscidia*. A large white flowered *Acanthus* is common & the thorny *C. cordulatus* forms solid masses. *Eriogonum quadrivalvulatum* is common.

Near Downieville

At the Mountain House (4500 feet) we begin to descend a continuous ⁵ grade that cuts into a steep ^{east} slope down to the N. Yuba R 4 miles below Downieville at 2700 feet. This is a forest & brush covered slope with numerous cold, N.E. gulches & beautiful little streams.

In place the Philadelphus bushes are loaded with flowers that load the air with fragrance.

Camped in gulch half a mile from N. Yuba R. Came only 10 miles.

June 23 Remained at camp in gulch writing up notes & doing various left over pieces of work while the horses' backs rested & got sound.

June 24 Sunday. Went to west end of Woodruff Gulch up good trail to old mine. Found Cincclus, Cyanocitta nest, Blue grouse with young as big as doves, & saw the little winter wren. Saw deer tracks & porcupine hills. No chipmunks

Up Yuba R.

June 25 Struck N. Fork Yuba R. & walked from camp & followed 4 miles up to Downieville, crossing to north side on toll bridge a mile below town. In this part of canyon found a trace of Upper Sonoran species mixed with the Transition, viz:- *Acastophyllum viscidum* & the tall, white flowered *Erriogonum*. Otherwise Transition species cover the high, steep slopes & the narrow strips along the river banks. The river is a rapid, muddy stream full of places of debris. The banks have been washed out & the bars scraped up for gold dust. A few little ranches hang on to the side slopes or nests in nooks of the river valley.

Downieville is a typical mining gulch town with only one street, but it is old & has many comfortable & even prettily houses.

Got supplies & continued up the South Fork of N. Yuba R. about 8 miles & camped 4 miles below Sierra City.

Good road but heavy toll.

Barometer read at camp in Woodcuff Gulch 2750 at river 2550, at Downieville 2800, at Camp 3750.

To Sierra Buttes

June 24 Camp 4000. 7 AM.

Horses went back about 4 miles we got a late start. Followed up the river gulch rising slowly & steadily. Came to Sierra City in about 4 miles, (4300 ft.)

Then turned north up North fork of the south fork of N. Yuba R. + camped at noon at 5150 feet at old cabin, at E. base of a mass of tall, ^(Sierra Buttes) zigzag peaks that we saw from Marysville. Large banks of snow lie at their base about 2000 feet above us.

Steep slopes covered with chaparral + scattered forests of *Pinus ponderosa* + *Pseudotsuga* + *Libocedrus* + *Abies lowiana*.

At 4800 feet on E. slope struck abundance *Aeonothus cordatus*, C-
of *Quercus vacciniifolia*, ^{few} *Arctostaphylos*
wangenita, *Castanopsis* + ^{few} *P. lambertiana*.
This really marks a change to Canadian zone
on E. slope. From Camp we can see
hemlocks near the snow 2000 feet above
us on N.E. slope.

Sprained my ankle in morning + found riding especially heated to remain at lunch camp over night. Came only 10 miles. Goldman set out a line of traps.
I could not walk.

Shot one large *Tamias senex*?

Lincoln Meadows

June 27 Antle bitter so we broke camp.
Goldman caught 2 species of *Peromyscus*
one big eared & a lot of small ones.

Continued up the creek with good road
& gradual ascent in a N.E. direction
about 8 miles & camped at some meadows
at north of Lincoln Creek at 6300 feet. Camped
among *P. murrayana*, *P. Monticola*, *P. JEFFREYI*,
Abies, *Populus tremuloides* & other
Canadian zone plants. The lower part of
the gulch is mainly open & densely
covered with chaparral - *Quercus vaccinifolia*,
Arctostaphylos manzanita, *Castanopsis*,
Ceanothus cordatus &c. —
Fire seems to have destroyed the old forest
which still exists in strips & patches
& consists of *Pinus ponderosa*, *P. lambertiana*,
Pseudotsuga, *Pinus lowiana* &
Quercus californica - a typical transition
zone set. At 5600 feet *P. murrayana* &
other Canadian zone species begin in
the bottom of gulch & on meadows &
at 6000 feet the whole slope becomes
Canadian. (This point on the stage
road is about 18 miles from Sierra City
or 6 miles straight N.E. of Sierra Buttes.)
Little meadows & open parks are

common along the stream & the woods became more continuous & dense & cool. Some pretty camp places were passed. The stream became clear & beautified above where the Young America mine turned in its muddy wash. Side streams became numerous & gulches full of alders & willows are frequent. The chaparral becomes less dense over the higher slopes & does not come into the woods.

The stream we camped on is too big to jump across & is very rapid. It seems to be the east branch of the west branch of the north fork of the south fork of North Yuba R. We camped on its bank in a grove of nutty pines. Goldman set out a line of traps while I made skins & got supper. My foot is still too sore to walk on.

Entanias sex began with *P. murryae* at 5600 feet & was common all the way up to camp; apparently restricted to Canadian zone. One *Entanias texana* was taken at upper camp. *C. chrysodermis* & *Sciurus californicus* are both common in Canadian zone.

To Sierra Valley

June 28

Jolivan caught 10 little
Peromyscus and one Sorex +
Chipmunk.

Started up the gulch leading east
at right angles to stage road +
followed an old road about 4 miles to
cross a big meadow at 7000 feet + camped.
High up in Canadian zone with snow
banks all around us + hemlocks
growing not far above. The big meadow
is called Lincoln Valley & the creek
we suppose is Lincoln Creek. No one
lives here + no stock is here now
though sheep are usually pastured
here. It is said that some plant
killed many of the sheep last year +
none have been brought in this year.

The big meadow is surrounded by high
ridges of lava + cinders volcanic rock
that seem like the rim of a big old
crater. Most of the range is granite.
We climbed to top of the highest part of the rim
west of meadow where we found much snow,
some hemlocks, and a few blue grouse.
at about 8000 feet. Had a fine view
over Sierra Valley to the N.E. + of Sierra Buttes
to the S.W. over timber covered ridges about

The little creek is full of trout that
provokingly refuse to bite. Mosquitos are
bad but soon frequent after sundown.

Ectemnius pallidus is abundant from
at least 4500 ft up to top of ridges.
No other species seen.

Thomomys com.

Sciurus californicus,

S. chrysodonius , "

Peromyscus swallow, 14 in traps in morning.

Lutreola , one lived under log.

Castor , gnawed trees were common.

Deer , a few tracks seen.

Bear - brown. said to be common.

To Sierra Valley

June 29. Started for Sierra Valley cross roads
Came over ridge north to small stream &
pretty meadows followed up it to its head
& over flat divide & down a similar little
creek with meadows to the east. Traveled
through clean, open forests of *Abies magnifica*
& *P. murrayana* - *P. monticola* full of parks &
meadows down very gradual descent
for 5 or 6 miles. Then came to abrupt
& rocky descent for about 2 miles
down to edge of Sierra Valley. No trail
- the slope covered with chaparral.
Had hard work to get down but
made it in course of 2 or 3 hours.

Lift Canadian zone at about 6600
feet on east slope where we struck
Pinus ponderosa & *luboocina* & left
P. murrayana & *A. magnifica*. Did not get
this limit very accurately as Powers
kept busy looking for a way through the
rush & around rocks.

Saw one bear track & when we got down
found the gulch was called the Bear Den
because so many bear live'd in it.

Came out into Sierra Valley 3 miles
north of Sierraville, road 8.4 mi. + and
at Hot Springs, a mile S. of Sierraville,
about 10 miles

June 30. Remained in camp a day to work Sierra Valley. Find it is a big, flat bottomed old lake bed, 12 1/2 miles across & surrounded with lava ridges on the E. & N. with a few small cones & craters in its edges. An indistinct shore line about 75 feet above the bottom shows on the rare sage brush covered east side. Forest covered ridges surround the valley, 1000 to 2000 feet above its bottom. The whole valley is meadow & much hay is cut & stored wintered. It is largely a dairy region. All the land is fenced & good numbers are numerous.

The valley is straight transition with *Artemisia tridentata* & *Augia*, *Wyethia*, & *Balsamorhiza* as its most characteristic plants outside of the marshes. *Pinus ponderosa* & *Liquidambar* come down to edge of marshes on W. side, but the east side is mainly sage covered ridges with scattered junipers extending up the first slope to 5,000 feet. Barometric reading 15300 in valley.

Sierraville is 28 miles from Truckee with good wood & dairy stage.

July 1. Started for Weber Lake by the short cut road but took several wrong roads & finally camped on the summit at 7300^{ft}.¹ a mile from the lake & overlooking it from its north. Set traps for Marmots & hunted Chipmunks.

Hiked S.W. from Sierraville & soon left the sagebrush valley & followed up a creek among yellow pines & firs to the sawmill, then up a steeper slope striking edge of Canadian zone at 6100 in steep N.E. gulch, passing from *P. ponderosa* & *jeffreyi*, *libocedrus* & *Abies lowiana* to *Abies magnifica*, *P. monticola*, *Acer glabrum*, and at 7000 to *P. murrayana*. This change from transition to Canadian is about 7 miles S.W. of Sierraville.

Eutamias amoenus is common in Sierra valley & up to edge of Canadian zone. No species seen in Canadian. Several fresh bear & deer tracks were seen. *C. chrysostoma* is common. An old quail & brood of tiny young were nearly trampled by our horses feet.

Webber Lake & Independence Lake

July 2

Descended 400 feet in a mile & a half & reached Webber Lake, a beautiful sheet of blue water a mile wide lying in a park-like valley of meadows & forest surrounded by snowy peaks & ridges. *Pinus murrayana* is the only tree observed in the bottom part of the valley & it forms clean groves and forest strips between the deep green meadows parks and creeks. The parks & meadows are brilliant with flowers, blue fields of *Delphinium* & *Ceanas*, pink *Rudicularis* & *Dodecatheons*, white "Epsos" & *Polygonum*. There are 2 good looking cottage hotels on the lake shore in *P. murrayana* groves, lots of boats on the lake and some boarders.

The only objection to the place as an ideal summer camp is the people, or the fact that people are there. A good road comes to it from Truckee & goes over the pass to Nevada City.

The whole valley is pure Canadian zone with a Hudsonian rim higher up. Barometric read 7300 at camp on ridge, 6900 at lake.

Followed lower Little Truckee R.

which comes out of Webber L. and
in about 3 miles descended into a
transition zone valley of 6700 feet
full of sagebrush, *P. ponderosa* & *p. jeffreyi*,
& with *Juniperus* still following the river
banks. Followed down the river 9 miles
to 4500 feet and turned on a branch road
to the S.W. up grade again & in 3 miles
came to the lower end of Independence Lake
at 7000 feet. Struck Canadian zone a
mile east of the lake at about 6700 feet
Found a bottle & hundreds of tents at lower
end of lake so took an old sheep trail
along north shore of lake to its west end
& camped half a mile beyond lake in
the big glacial gulch at practically 7000 ft.
but slightly above the level of lake.

Independence Lake is very similar to former
lake. It is an old glacial trough a
mile wide & 3 or 4 miles long with steep
shores that go down "caphouse". The lake
is merely a feature of the gravelled
glacial bed, coming from its ^{was created} crater
circa at 9000 feet, 2 or 3 miles west of
the lake with its cinders & lava crusts
& its granite bed & its long moraine.
Heavy forests come down to the water.

except where burnt off & grown up to
Ceratostus & *Quercus vaccinifolia*.

Pinus Jeffreyi is common, especially along
the north shore of lake on the warmer of the
two slopes, but *Pinus murrayana*, *Pinus*
monticola, *Abies magnifica* (and a variety
of *A. lowiana*) and *Populus tremuloides*
form the bulk of the forest. There are
meadows & willow & alder groves at
west end of lake & elegant places
to camp. While people swarm at
the lower end the upper end of the lake
is uninhabited & untrampled, though
we passed a big herd of sheep coming
up past the lake. Mosquitos are bad.
The stream is full of good sized trout
that refused to bite.

Eutamias sericea & *ocellatus* are
common at camp. Throwing hills &
mole ridges are common.

Summit

July 3 Climbed to head of our canyon to Summit Lake^{at 8400} to a snowy peak above it at 9000 feet. Could look down on Independence Lake, a hot-rock lake, the lake at head of N. Yuba R. & a dozen more of various sizes. Found that a semicircle of cinder & lava crests formed the peaks around the head of the canyon that had been cut out to the north ^{through the rim of} from an immense crater. The crater is very old. The glaciers have cut deep into the granite. Lakes fill the scooped out places. Snow banks are extensive and deep & hard out so glaciers among them. The snowbanks are common down to 8000 feet.

At 7700 feet on N.E. step slope *Tsuga* begins & extends to top of peaks on warm slopes. At 8400 feet *Bryanthus* begins & is common above. *Pinus monticola* reaches to 9000 and becomes dwarfed & prostrate only distinguishable from *albicaulis* by its cones. *Juniperus occidentalis*, *Circocarpus ledifolius*?, *Artemisia tridentata*, and a little *Artemisia* come up on dry slopes and rocky ledges to the summit and above.

To Donner

July 4. Broke camp and started for Donner across summit of range. Climbed to summit and then down into Paradise Valley on the west slope. Followed down Paradise to 7200 feet + turned south, picking our way over rocky ridges & through gulches along the west slope of the range. Camped at 7500 feet where the hemlocks traveled in Canadian zone all day except for the Hudsonian strip along the summit. Did not get below hemlocks & Bryanthus on cold slopes.

July 5. Continued a few miles south to the railroad, below Donner Meadows + followed up to east end + camped just below Donner. Got mail + supplies + wrote letters.

Came about 3 miles straight across but had to pick our way over rocks + through gulches and probably traveled 8 miles.

It has taken a day + a half to come from Independence Lake scarcely more than 10 miles away in a straight line. We found rough country + no trail. Came too far west over glacial worn granite. Struck River 4 mi. W. of Donner.

July 6. Wrote letters & reports all day.

July 7. Walter Fisher came.

Remained in camp finishing reports
& collecting things in the big meadow.

July 8. Sunday. Climbed to top of Lincoln
Peak, 3 miles south of Downes, 8400 feet high.
Found a good wide strip of Hudsonian
on the upper 2000 feet of its N. slope,
with hemlocks, *Salix g. villosa*;
Bryanthus breweri, *Sibaldia procumbens*,
& dwarfed *Pinus monticola* & *Abies vaginifera*.
Big snowbanks come down to 7400 feet &
lower on steep slopes.

Found signs of *Lemna campestris* on top
of peak, also of *Urticaria* & *Thomomys*.

Men are at work cutting out the
corium in the meadows above Downes
as several cows have been killed by it.

July 9. Sent Walter Fisher down the road
for *Eutrema quadrangularis* but in
going 12 miles he did not reach
the edge of Transition zone, 6700 feet
was the lowest altitude reached. He found
Senecio & *Hastis* as low down as he went.

We went around to the basin on south west side of Castle Peak on the trail to Paradise Valley. Found some pretty little basins with streams & lakes & meadows but all eaten bare by sheep.

Came back over the trail east & north of Summit House, saw a big Arctomys in rocks near the road.

July 10 Packed up & moved camp to head of amphitheater 2 miles south of Downer to 7500 feet altitude, camped by little meadow near snow patches under the hemlocks.

The two ridges running east & west & turning north from Lincoln Peak form a circular amphitheatre that was once the rim of an inner crater. The glacier has cut out its north side of rim, & woods and meadows now fill the gulch. The remaining part of rim including Lincoln peak, is lava & cinder & burnt rock. Lava & volcanic rock extends south to Timber knot at least.

Set traps in meadows near camp.

July 11. Went over into valley of N. Fork American River above Soda Springs & around to south side of Timber Knob, to look for trail to Lake Tahoe & see if the country was worth working.

Found 2 big herds of sheep & the grass all eaten off & country bare & dusty.

The pass over to Squaw Creek is very steep & rocky. & the timber cover down is mostly burned off. Concluded not to move camp to this side.

Saw some bear sign but sheep have spoiled the country for wild things.

July 12. Went around north of Donner Peak & found a beautiful meadow & mullock grove to camp in, above the hotel & station & overlooking Donner Lake. This one of the prettiest places to camp in I ever saw.

July 13. Moved camp over north of Donner Peak to little meadow near big snowbank at 7900 feet.

July 14. Have been collecting around camp for 3 days getting *Lagomys*, *Arctomys*, *Neosorex*, *Microtus* etc - Today I went down to Donner lake where *S. beldingi* is common & got some to show whether typical. The lake lies in Canadian zone at 6100 feet except a few transition zone things in the dry, hot slope facing south. An extensive grove of willows, *myrsin* - *aspens* at the west end of the lake forms good cover for mammals. Saw rabbit tracks in the trails. Some park like meadows near the lake all bones of numerous *S. beldingi*, *Eutamias amoenus* & *sonori*, *B. arcticus* & *Thomomys*.

On return trip came by short cut to camp, up the slope over snow shed and around south of the rocky end of Donner peak. Had a hard climb down 2000 feet & back without getting much.

Killed a young woodchuck, *Eutamias sonori* & *S. beldingi*. Took a lot of photos of rock slides to the glacier worn rocks in Donner pass & lower down of *Pinus jeffreyi*.

To Emigrant Gap

July 17. Packed up specimens, wrote letters and started Walter on a trip to Amidee. Didn't get much else done except a few skins made up & a few traps set.

July 18. Went over to ridge on east side of Donner Peak down nearly to snow sheds in the big loop but did not find much. Saw one Coyote but missed it.

July 19. Rode down to Truckee by the railroad loop & Donner Lake, returning by Donner station. Made the trip for a zone line but found Truckee in nearly pure Canadian, though arid. On hot slopes many transition things come up to Donner Lake. Found *S. beldingi* to Truckee.

July 20. Sunday. Worked at camp.

July 21. Took 8 AM train to Emigrant Gap & returned on 5 PM train. Found plenty of *Citellus quadrivittatus* & other transition zone things. & a trace of Canadian on cold slopes. Got a lot of birds & mammals.

To Lake Tahoe

July 22 Sunday. Made up yesterdays batch of specimens.

July 23 Wrote reports & packed specimens

July 25 Broke camp at Donner Peak & moved down to west end of Donner Lake. Set traps & hunted. Shot *Pictale acadicus* in evening.

July 26. Hunted & trapped & made specimens at camp.

July 27. Started early, followed down north side of lake to Truckee & up river to Lake Tahoe. Camped 2 miles south of outlet of lake on shore. Came about 25 miles. Good road all the way & a new narrow gauge railroad just being completed from Truckee to Tahoe.

A few transition zone things come from Truckee up the valley of Truckee river on dry & hot slopes to the lake, but in general the vegetation is Canadian.

Asternisia tridentata, *Rumia nudata*, *Ceanothus velutinus* & *prostratus*, *Rosa californica*, *Ribes cereum*, *Arctostaphylos*

patula, & other transition zone plants extend up the river to Lake Taboe & along the west shore of the lake in dry, warm slopes. *Libocedrus* and a few *Pinus ponderosa* grow along the lake shores, the latter at Emerald Bay and Zallae. The rather barren, burnt off & chopped off, east side of the lake with its dry, warm slope is undoubtedly as nearly pure transition as the west side is Canadian, so the lake valley is a mixture on the edge of Canadian & transition zones. The bulk of timber & shrubs along the west side of lake is of *P. jeffreyi*, *P. murryana*, *Abies magnifica*, *A. lowiana*, *Populus tremuloides*, *P. trichocarpa*, *Quercus vaccinifolia*, *Prunus emarginata*, *Ceanothus cordatus*, all Canadian zone species. The lake is 6225 feet and except for dry, hot slopes right to be pure Canadians. The large size of the basin valley, however, gives the effect of high baselevel.

The lake is neither an immense crater nor a glacial scoop. It lies between two ranges of mainly granite mountains and owes its basin

form to a lava cross ridge, one several hundred feet above the lake, running across the valley at north end of lake. The outlet has cut a notch 200 or 300 feet deep through this lava ridge, just below the lake. The road & railroad run through this notch.

Big glaciers have come down into the lake, or into the valley before the lake was there, on the west and scoop out wide troughs. Emerald Bay, Cascade Lake & Fallen Leaf Lake, Emerald Bay being the only one at present reaching into ~~the~~ lake Tahoe, but the main lake basin is merely a mountain valley between two ranges.

Spilogale veldigi was seen very few miles along the way from Donner lake & trucked up the river to lake Tahoe & along the lake shore. Its range is perfectly continuous from Tahoe to Donner.

To Emerald Bay

July 28. Followed along the west side of Lake Tahoe in good wagon road to Mc Kinney and on a little used road to Frasts & then on trail to Emerald Bay. + camped. Came about 20 miles + part of the way over rough country. Most of the good timber has been cut + put in the lake for lumber from not only the shore but back over the ridges. Old shoots remain down the steep slopes to the shore. The timber was once magnificent *P. jeffreyi*, *Lambertianus*, *Tsuga*, + *Abies magnifica* + *lowiana*. The big stumps stand all around but all else has been burnt or most of the small trees destroyed except in damp places. Thick chaparral covers the country. The ground is sandy + dusty + hot. A few miles of magnificent, untouched forest at Idyllwild show what it once was all along the lake. This + at Emerald Bay are the only uncut spots. A big basaltic tower 400 or 500 feet high stands in the forest at Idyllwild, which is the prettiest place north of Emerald Bay.

Mc Kinneys is a hotel & cottage camp place in rather brushy, unattractive country. Frost's is a new place, not very interesting.

At noon we hunted on General Creek, & found lots of big lake trout trying to get up the creek - evidently they were spawning as in places the creek bottom was covered with eggs in every stage of segmentation. The trout were often stranded on shallow places or at logs in the small stream & many dead ones were seen.

The shores of the creek were tracked up with bears that had been feeding on the fish.

Spermophilus beldingi were seen at suitable places all along the lake shore. Gulls were the only birds on the lake. Many mountain quail & a few blue grouse were seen, old & young of both.

The rock is mainly granite & much of it soft so it forms loose granite sand.

July 29 Tuesday.

Remained at Emerald Bay all day
& explored the canyon above.

Camped under big *Pinus ponderosa* on
the shore & let the horses run in the
little meadow. Photographed the falls
and bay. Two falls just back of the bay
are very pretty but only about 50 or
60 feet high. The canyon rises rapidly
and the peaks & slopes are very abrupt
around the bay and are rounded & smoothed
by ice.

Mrs. Armstrong, the lovely, white-haired
old lady who owns & keeps Emerald Bay
as a private property was extremely
hospitable & pleasant to us, letting
us camp & pasture our horses on her
little flower-garden meadow. We
visited Sailor Jack, a bony crazy old
fellow who has a house boat on the shore
half way down the bay where he
stays all the year, doing odd
things to "study". His main study
is the "perfection of ease".

Fallen Leaf Lake

July 30

Followed a fairly good trail over the ridge to Cascade Lake & a road from there to Tallec - 6 miles in all.

Cascade Lake is a good place to camp with plenty of grass. Crossed big meadows near Tallec where the dairy cows range.

Got mail & supplies & went out to Fallen Leaf Lake & camped near middle of north west side.

July 31. Rode up to Camp Agassiz but Price & his boys had gone around Lake Tallec. Then rode up to Glen Alpine Springs & back to camp, almost encircling Fallen Leaf Lake.

Aug. 1. Moved camp about 5 miles south to Myers, on Hope, Truckee R. & camped in the big flat under ^(7300 ft) *Pinus montereyana* at edge of meadow. Set traps, hunted & wrote up notes.

Aug. 2. Went back to Tallec for mail & supplies.

To Placerville

Aug. 3. Started for Placerville

At Myers we turned into field to go by the dairy ranch & rode for a mile over sandy flat where the big junipers grow - 4 feet in diameter & 75 feet high - photographed several. Followed up the valley a short mile & turned up the grade over crest of range at 7500 feet. Good road up steep slope.

Went around to Echo Lake but decided to return & camp on Placerville road at upper end of meadows on west slope. Camped at 7300 feet just below Indian Lake. This is the extreme head of the south fork of American River.

Came only 5 miles on the direct road. Camped at noon & hunted. Got a male Pinicola. Found signs of snowshoe rabbits common. *S. beldingi* & 3 species of *Entomias* are common. *Thomomys*, *Peromyscus*, *Microtus*, *Peromyscus maniculatus*, *Peromyscus maniculatus californicus*, are common. *Areotomys* seen. A few deer tracks seen in meadow.

Aug 4.

Started down S. Fork American R.
Stup, jagged granite ridges on both
sides. Big meadows & *Abies magnifica*
& *P. murrayana* forest for a few miles,
then steeper grade & narrow gulches
& more rocky country until we passed
through The Gate at Eelo (Strawberry
Valley), then gentler slope but narrow
gorge to Slippery Ford, where
we camped.

Eelo at 5500 feet, marks beginning of
transition zone on west & S.W. slopes
P. ponderosa, *Lambertiana*, *Abies*,
& the whole set of transition trees &
shrubs begin abruptly to the Canadian
species - *Abies magnifica*, *P. murrayana* &
monticola - stop.

The 3 upper species of *Eutamias* were
not seen below Eelo, but *E. quadrivittata*
began & was common. *Sciurus jacksoni*
& ~~digueti~~ *S. feebeji* also became common.

Slippery Ford is 4000 feet & on S.W.
dry slope a few traces of Sonoran
begin to appear - *Ceratostylis integrifolia*
and one or two bushes of *Arenostaphylos viscidula* were
seen. In general still pure transition.

Aug. 5. Slippery Ford to Sportmen's Hall - 23 mi.

Followed down the S. Fork. American R. to Riverton (Moore's) where we crossed to south side on bridge at 3300 feet. The canyon is narrow and the side slopes are steep and at present dry. On the south side of river many upper Sonoran species come up to Moore's which fairly marks its extreme upper limit! Opposite side of canyon is pure transition, & after crossing the river we go up a gradual grade to 4000 feet on top of ridge at 14 mile house (Sportmen's Hall). Here the road descends again but on open ridges sloping S.W. & N.W.

Pinus ponderosa & *lambertiana* & *Pseudotsuga* *libocedrus*; *Abies lowiana* & *Quercus* *californicus* ^{& chrysophyllis} are the trees of transition zone on this part of the slope. *Arctostaphylos*, *petula*, *Ceanothus cordulatus*, *prastratus*, & *velutinus*, *Baumus ewigwata*, *Corylus* & *Betula* are the principal shrubs.

Eutamias quadricaudatus are common from Pacific along to near Sportmen's Hall.

Aug. 6 Sportswan's Fall to Placerville, 12 mi.

Followed down open dry transition zone ridges to Grizzly House (6 mi. E. of Placerville) where Upper Sonoran begins at 3000 ft (S.W.), marked by *Pinus sabina*, *Bursera douglasii*, *Lobata*, + *agujabia*, *Arctostaphylos viscida*, *C. cuneatus*, *Aesculus californica* + the whole set of Upper Sonoran plants. *P. ponderosa*, *Abies concolor*, *Pseudotsuga*, + *A. californica* ran down to Smiths Flat (2300 ft) + slightly to Placeville (at 1900). I shall take Smiths Flat as the average edge of Upper Sonoran on West slope. It is in the foothills with fertile valleys + low ridges, red soil and good crops where water is used for irrigation. Hay, grain, + fruit are the main crops. Grapes, figs, peaches, pears, plums, apples + berries are seen along the road.

Lepus californicus tracks are common up to Sportswan's Fall (4000 ft), 1000 ft into transition zone.

back to Echo Lake

Aug. 7. Had to send to Sacramento for pack-saddle so remained in camp at Smith Flat. Hunted hard for *Eutamias amoenus* but found none & was told that no chipmunks were known this side of Spotswood Hall. Went to Placerville again but found the saddles still had to be fitted up & could not get them until morning.

Placer is a lively little town where the mining industry is yielding to the agricultural.

Aug. 8. Went to Placer & got saddles & then started on return trip.

Came as far as Pacific & camped.

Aug. 9. Passed Riverstore & Slippery Ford & camped about 5 miles west of Echo at about 5000 feet, where *Aplodontia* holes were found. Set traps & caught a fine old male *Aplodontia major*. This is in pure transition zone.

Aug. 10. Came back to Echo ^{Lake} & back to our old camp near Indian Lake

Aug. 11.

Took a tramp round by Echo Lake & to upper end, then back over the ridge to camp. Climbed to peak on ridge at 9200 feet where I found abundance of *Pinus albicaulis* full of mature cones & also *Saxifraga tolmei* & *Oxyria digyna*. Had a fine view of the amphitheater of high peaks from Mt. Tallac around to Pyramid & of Echo Lake & Tabor.

Found populus camps at both ends of Echo Lake & saw horses at the little lakes to the west. Found the lake valley a very bare, rocky glacial trough with scant timber. The upper lake contains a dozen rocky islands & there are cottages on two of these.

Aug. 12. Sunday.

Remained at camp most of the day.
Heavy frost every night - clear days.

Aug. 15 Went down to old camp on Upper Truckee River, (4 mi. S. of Tabor) Camped & took horses into Tabor where I met Dr. Merriam & John Muir.

Aug. 14. With additions of Dr. Merriam & John Muir of this
was & team our party moved
southward ~~up~~ ^{over} the range east
of Upper Smoky River, and camped
at Grass Lake on the summit.

From this on Dr. Merriam
will keep the journal notes.







